



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. E-9427

This Certificate consists of 6 pages

This is to certify that the
Frequency Converter
with type designation(s)

ACS 800-01 / ACS 800 U1 / ACS 800-04

Manufactured by

ABB Oy, Drives
HELSINKI, Finland

is found to comply with

Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

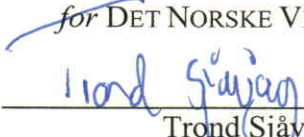
Application

Frequency converters for use in marine and offshore applications

Place and date

Høvik, 2009-04-07

for DET NORSKE VERITAS AS


Trond Sjøvåg
Head of Section



Local Office
DNV Helsinki

This Certificate is valid until

2012-06-30


Nicolay Horn
Surveyor 

Notice: This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid. The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.



Cert. No.: E-9427

File No.: 822.21

Product description

3-phase variable speed drive for motor applications, ACS800-01+C132, ACS800-U1+C132 and ACS800-04+C132.

Output data for input voltage $U = 230\text{ V}$

Type designation	Mains supply (V)	Frame size	Nominal ratings *	
			$I_{\text{cont. max}}$ (A)	I_{max} (A)
AC800-01/04-0001-2	208 – 240 V	R2	4,8	6,5
AC800-01/04-0002-2	208 – 240 V	R2	6,2	8,2
AC800-01/04-0003-2	208 – 240 V	R2	8,1	10,8
AC800-01/04-0004-2	208 – 240 V	R2	10,4	13,8
AC800-01/04-0005-2	208 – 240 V	R2	13,2	17,6
AC800-01/04-0006-2	208 – 240 V	R3	18	24
AC800-01/04-0009-2	208 – 240 V	R3	24	32
AC800-01/04-0011-2	208 – 240 V	R3	32	46
AC800-01/04-0016-2	208 – 240 V	R4	42	62
AC800-01/04-0020-2	208 – 240 V	R4	52	72
AC800-01/04-0025-2	208 – 240 V	R5	68	86
AC800-01/04-0030-2	208 – 240 V	R5	82	112
AC800-01/04-0040-2	208 – 240 V	R5	98	138
AC800-01/04-0050-2	208 – 240 V	R6	134	164
AC800-01/04-0060-2	208 – 240 V	R6	158	202
AC800-01/04-0070-2	208 – 240 V	R6	192	282

Output data for input voltage $U = 400\text{ V}$

Type designation	Mains supply (V)	Frame size	Nominal ratings *	
			$I_{\text{cont. max}}$ (A)	I_{max} (A)
AC800-01/04-0003-3	380 - 415	R2	4,8	6,5
AC800-01/04-0004-3	380 - 415	R2	6,2	8,2
AC800-01/04-0005-3	380 - 415	R2	8,1	10,8
AC800-01/04-0006-3	380 - 415	R2	10,4	13,8
AC800-01/04-0009-3	380 - 415	R2	13,2	17,6



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Type designation	Mains supply (V)	Frame size	Nominal ratings *	
			I _{cont. max} (A)	I _{max} (A)
AC800-01/04-0011-3	380 - 415	R3	18	24
AC800-01/04-0016-3	380 - 415	R3	24	32
AC800-01/04-0020-3	380 - 415	R3	32	46
AC800-01/04-0025-3	380 - 415	R4	42	62
AC800-01/04-0030-3	380 - 415	R4	52	72
AC800-01/04-0040-3	380 - 415	R5	68	86
AC800-01/04-0050-3	380 - 415	R5	82	112
AC800-01/04-0060-3	380 - 415	R5	98	138
AC800-01/04-0070-3	380 - 415	R6	134	164
AC800-01/04-0100-3	380 - 415	R6	158	202
AC800-01/04-0120-3	380 - 415	R6	192	282
AC800-01/04-0135-3	380 - 415	R6	214	326
AC800-01/04-0165-3	380 - 415	R6	247	326
AC800-01/04-0205-3	380 - 415	R6	276	351

Output data for input voltage U = 500 V

Type designation	Mains supply (V)	Frame size	Nominal ratings *	
			I _{cont. max} (A)	I _{max} (A)
AC800-01/04-0004-5	380 – 500 V	R2	4,7	6,5
AC800-01/05-0005-5	380 – 500 V	R2	5,9	8,2
AC800-01/04-0006-5	380 – 500 V	R2	7,7	10,8
AC800-01/04-0009-5	380 – 500 V	R2	10	13,8
AC800-01/04-0011-5	380 – 500 V	R2	12,5	17,6
AC800-01/04-0016-5	380 – 500 V	R3	18,5	24
AC800-01/04-0020-5	380 – 500 V	R3	24	32
AC800-01/04-0025-5	380 – 500 V	R3	32	46
AC800-01/04-0030-5	380 – 500 V	R4	40	62
AC800-01/04-0040-5	380 – 500 V	R4	46	72
AC800-01/04-0050-5	380 – 500 V	R5	62	86
AC800-01/04-0060-5	380 – 500 V	R5	75	112
AC800-01/04-0070-5	380 – 500 V	R5	92	138
AC800-01/04-0100-5	380 – 500 V	R6	118	164



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Type designation	Mains supply (V)	Frame size	Nominal ratings *	
			$I_{\text{cont. max}}$ (A)	I_{max} (A)
AC800-01/04-0120-5	380 – 500 V	R6	149	202
AC800-01/04-0140-5	380 – 500 V	R6	171	282
AC800-01/04-0165-5	380 – 500 V	R6	214	326
AC800-01/04-0205-5	380 – 500 V	R6	247	326
AC800-01/04-0255-5	380 – 500 V	R6	276	351

Output data for input voltage $U = 690 \text{ V}$

Type designation	Mains supply (V)	Frame size	Nominal ratings *	
			$I_{\text{cont. max}}$ (A)	I_{max} (A)
AC800-01/04-0011-7	525 – 690 V	R4	12	14
AC800-01/04-0016-7	525 – 690 V	R4	16,5	19
AC800-01/04-0020-7	525 – 690 V	R4	21	28
AC800-01/04-0025-7	525 – 690 V	R4	24	38
AC800-01/04-0030-7	525 – 690 V	R4	31	44
AC800-01/04-0040-7	525 – 690 V	R4	34	54
AC800-01/04-0050-7	525 – 690 V	R5	48	68
AC800-01/04-0060-7	525 – 690 V	R5	54	84
AC800-01/04-0070-7	525 – 690 V	R6	75	104
AC800-01/04-0100-7	525 – 690 V	R6	88	124
AC800-01/04-0120-7	525 – 690 V	R6	107	172
AC800-01/04-0145-7	525 – 690 V	R6	127	245
AC800-01/04-0175-7	525 – 690 V	R6	157	245
AC800-01/04-0205-7	525 – 690 V	R6	180	245

- * $I_{\text{cont. max}}$ = Rated current available continuously without overloadability at 45 °C.
 I_{max} = Maximum output current. Available for at least 10 seconds at start.
 Longer if drive temperature allows.



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Application/Limitation

3-ph supply voltage	$U_{2IN} = 208 - 240 \text{ V} \pm 10 \%$ $U_{3IN} = 380 - 415 \text{ V} \pm 10 \%$ $U_{5IN} = 380 - 500 \text{ V} \pm 10 \%$ $U_{7IN} = 525 - 690 \text{ V} \pm 10 \%$
Frequency	48 – 63 Hz
Power factor	$\cos \Phi = 0.98$ (fundamental) $\cos \Phi = 0.93 - 0.95$ (total)
3-ph output voltage	$0 - U_{2IN}/U_{3IN}/U_{5IN}/U_{7IN}$
Frequency control	$0 - \pm 300 \text{ Hz}$ $0 - \pm 120 \text{ Hz}$ (with du/dt filter)
Degree of protection	ACS800-04: IP20 ACS800-01/-U1: IP 21 (standard), IP 55 (optional)
Temperature class	A
Humidity class	B
Vibration class	A
EMC	A
Obligatory option	+ C132

The frequency converter is to be regarded as a component. The actual installation to be designed according to ABB technical documentation, and to the applicable DNV Rules for the actual application. A product certificate is required in accordance with Rule paragraph Pt.4, Ch.8, Sec. 1, B303.

To be installed in/with an enclosure with an IP degree in accordance with DNV Rules w.r.t. location.

The Type Approval covers hardware and software for the basic controller. The Type Approval does not cover application software.

For marine applications of the drive, OPTION CODE + C132 to be chosen.

Type Approval documentation

Technical info:

ACS800 Marine Supplement 3AFE68291275, Rev. E EN issued 2008-04-23.

ABB drives for marine catalogue, dated 2004-06-03.

Test reports:

ABB Oy test report binder for additional types.

ABB OY Drives Marine Type Approval ACS800-01 +C132, Test reports binders 1 – 2.

Binder 1 includes: List of type tests, Routine test specification and test reports, Power supply variation and failure, Vibration, heat tests and EMC tests.

Binder 2 includes: EMC tests.



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Tests carried out

Full Current test, Heat Run Test, Power Supply Variation, Power Supply Failure, Dielectric, EMC (immunity and emission), Vibration, Low temperature and Damp heat (steady state and cyclic).

Marking of product

ABB

ACS800-xx-yyyy-z+...+C132

xx -01,-04 (standard) or -U1 (optional),
 where U= design according to UL standards.

yyyy kVA rating

z voltage class

+C132 obligatory option.

Certificate retention survey

The scope of the retention/renewal survey is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Survey to be performed at least every second year.

END OF CERTIFICATE